

**REMARKS**

Claim 1 has been amended to make a grammatical change. Claim 2 has been amended to resolve a rejection under 35 U.S.C. 112 without narrowing the claim scope. Claims 10 and 12-13 have been canceled. Claim 11 has been amended to change its dependency in view of the cancellation of claim 10 and to thereby facilitate rejoinder under MPEP 821.04(a).

Entry of the above amendment is respectfully requested.

**Priority**

On the Office Action Summary, the Examiner has neither acknowledged Applicant's claim for priority nor indicated that a copy of the certified copy of the priority document was received from the International Bureau. Since priority was claimed when the application was filed, and since a copy of the certified copy of the priority document was received by the PTO from the International Bureau as can be seen from the Notice of Acceptance, Applicants respectfully request that the Examiner acknowledge Applicants' claim for priority and indicate that a copy of the certified copy of the priority document was received by the PTO from the International Bureau.

**Rejection under 35 U.S.C. 112, Second Paragraph**

On page 2 of the Office Action, in paragraph 4, claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

**The Examiner's Position**

The Examiner's position is that claim 2 recites the limitation "the hydrogen chloride" in lines 1-2, but there is insufficient antecedent basis for this limitation.

### **Applicants' Response**

In response, and to resolve this issue, Applicants have amended claim 2 to change “wherein the content of the hydrogen chloride contained as the impurity in said crude product is 2 mol% or less” to “wherein said crude product contains hydrogen chloride as an impurity in an amount of 2 mol% or less”.

Thus, Applicants submit that this rejection has been overcome, and withdrawal of this rejection is respectfully requested.

### **Obviousness Rejection over US '949**

On page 3 of the Office Action, in paragraph 8, claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilmet et al. (US 7,179,949, US '949).

In response, Applicants submit that US '949 discloses a process in which a hydrofluoroalkane containing impurities of olefin compounds is purified by reacting it with hydrogen fluoride in the presence of a catalyst. For example, US '949 describes, at column 9, lines 24-27, to the effect that the invention is applicable to the purification of a hydrofluoroalkane obtained by hydrofluorination and, in Example 2, that a reactor containing hydrogen fluoride and titanium tetrachloride was fed continuously with a 1,1,1,3,3-pentafluorobutane containing 5.8% by weight of two trifluorodichlorobutene isomers to obtain a purified 1,1,1,3,3-pentafluoroethane.

When the present invention of claims 1-9 is compared with US '949, US '949 relates to a process for purifying a hydrofluoroalkane of 3 or 4 carbon atoms, but is silent concerning the purification of a compound of 2 carbon atoms such as 1,1,1,2-tetrafluoroethane or pentafluoroethane as in the present invention or the purification of a hydrofluorocarbon which is

an azeotropic component with hydrogen fluoride, such as 1,1,1,2-tetrafluoroethane or pentafluoroethane.

The present invention differs from US '949 in the point that a crude product comprised of a main product including 1,1,1,2-tetrafluoroethane and/or pentafluoroethane, hydrogen fluoride as an azeotropic component with the main product, and impurity ingredients including one or more unsaturated compounds, i.e., a system in which hydrogen fluoride exists in a certain amount, is newly added with hydrogen fluoride to be reacted so that the content of the unsaturated compounds can be effectively reduced.

Therefore, Applicants submit that the present invention is clearly distinguished from US '949, and withdrawal of this rejection is respectfully requested.

#### **Anticipation and Obviousness Rejections**

On page 6 of the Office Action, in paragraph 18, claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Manzer (US 5,185,482, US '482, and US 5,345,016, US '016) in view of Wilmet et al. (US 7,179,949, US '949). Also, on page 7 of the Office Action, in paragraph 22, claims 12 and 13 are rejected as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wilmet et al. (US 7,179,949, US '949) and Ohno et al. (US 7,045,668, US '668).

In response to these rejections, Applicants note that claims 10 and 12-13 have been canceled, so these rejections are moot. Accordingly, withdrawal of these rejections is respectfully requested.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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